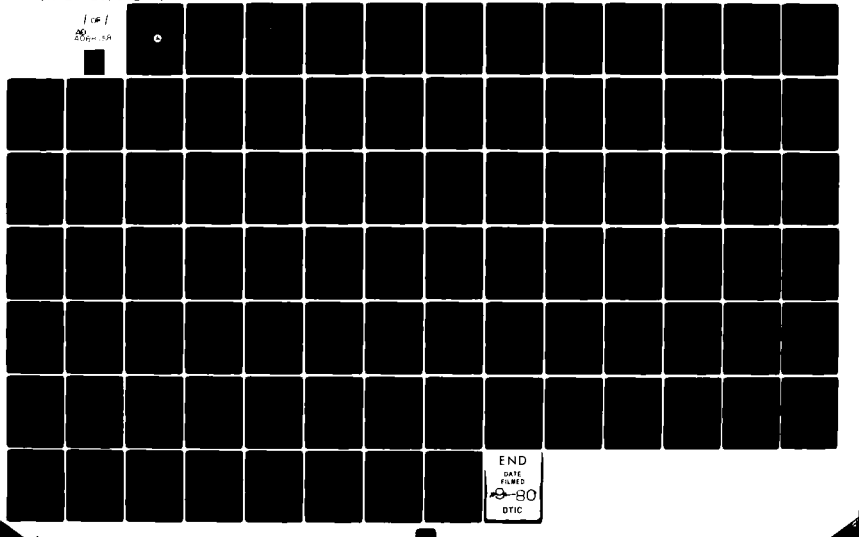
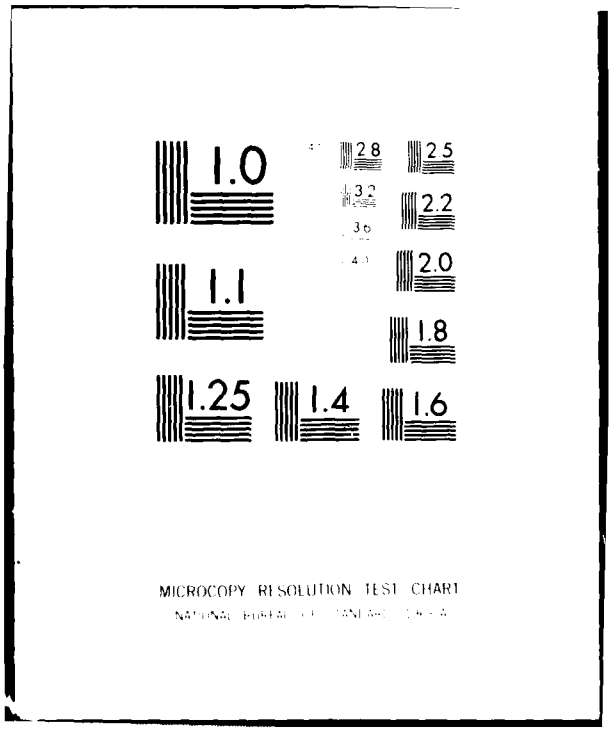
AD-A088 158 FEDERAL AVIATION ADMINISTRATION WASHINGTON DC OFFICE --ETC F/G 1/5
ENVIRONMENTAL IMPACTS OF AIRPORT POLICY ALTERNATIVES,(U)
SEP 77 W R FROMME
UNCLASSIFIED FAA-AVP-77-40 NL



END
DATE FILMED
9-80
DTIC


1.0
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6
MICROCOPY RESOLUTION TEST CHART

REPORT NO. FAA-AVP-77-40

LEVEL II

AD A088158

ENVIRONMENTAL IMPACTS OF AIRPORT POLICY ALTERNATIVES

September, 1977

Data Supplement to
The Metropolitan Washington Airport Policy Analysis

Prepared for

United States Department of Transportation
Federal Aviation Administration

Office of Aviation Policy
Washington, D.C. 20591

The contents of this report do not necessarily reflect the official views or policy of the Department of Transportation. This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

DISCLAIMER NOTICE

THIS DOCUMENT IS BEST QUALITY PRACTICABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
(14) FAA-AVP-77-40	AD-A088 158	

4. Title and Subtitle	5. Report Date
ENVIRONMENTAL IMPACTS OF AIRPORT POLICY ALTERNATIVES	SEPTEMBER, 1977
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
PROJECT OFFICER - (10) WILLIAM R. FROMME	(13)
9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
OFFICE OF AVIATION POLICY FEDERAL AVIATION ADMINISTRATION WASHINGTON, D.C. 20591	11. Contract or Grant No.
	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address	
(same)	14. Sponsoring Agency Code FAA (AVP-210)

15. Supplementary Notes

NONE

16. Abstract

The Federal Aviation Administration (FAA), as owner and operator of the Metropolitan Washington Airports (Washington National and Dulles International) is issuing a policy statement to guide development and operation of these facilities into the 1990's. The FAA's Metropolitan Washington Airport policy establishes a balance between a complex set of criteria which reflect transportation service, investment requirements, and environmental impacts.

This report provides much of the environmental assessment supporting the FAA's Metropolitan Washington Airport Policy Statement. The Noise Exposure Forecast (NEF) model is described, NEF data are presented by county and state; results of the airport emission analysis are listed; and automobile emission levels are computed. A description of the range of policy options considered is contained in the appendix of the report.

17. Key Words	18. Distribution Statement
METROPOLITAN WASHINGTON AIRPORTS AIRPORT POLICY ANALYSIS AIRPORT ENVIRONMENTAL IMPACTS	

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
UNCLASSIFIED	UNCLASSIFIED		

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

ENVIRONMENTAL IMPACTS OF AIRPORT POLICY ALTERNATIVES

TABLE OF CONTENTS

1.0 AIRCRAFT NOISE EXPOSURE

1.1 AIRCRAFT NOISE EXPOSURE MODEL

Noise Model Development

The Airport Noise Exposure Program was developed originally under a DOT contract with Serendipity, Incorporated in 1970. The model was refined and enhanced by the Joint Office of Noise Abatement (DOT and NASA) in 1972. The Noise Contour Model was further refined by the Aeronautical Systems Office of the NASA/AMES Research Center. In January of 1976 all programs and subroutines of the NASA/AMES version of the Noise Exposure Model were installed on the Boeing Computer System (BCS) for the FAA. All census impact analysis and noise contours for the Metropolitan Airport Study were developed using BCS computer programs.

Input Data

Each of the three Metropolitan Washington Airports, National (DCA), Dulles (IAD), and Baltimore Washington International (BWI) was defined in terms of a Cartesian coordinate system with the origin chosen at the beginning of one runway. Relative to this origin, each runway was described by coordinates at the start of the runway, the coordinates at the end of the runway, distance to the start of takeoff roll and the distance to the landing touchdown. (A runway used in both directions was defined as two distinct runways.)

Flight track information was provided for each runway aircraft types using the runway, and each segment of the flight path for aircraft arriving or departing from runway. Each segment (see Figure A.1) is defined by the segment length, climb angle, thrust level, radius of curvature and left/right indicator (for curved segments) and average speed over the segment. The following table summarizes the required input data items:

RUNWAY DATA:

Beginning coordinates
Ending coordinates
Distance to start of takeoff roll
Distance to landing touchdown point

FLIGHT DATA:

Indication of landing or takeoff
Aircraft type
Number of operations

SEGMENT DATA:

Number of segments
Segment length
Climb angle
Thrust level
Radius of curvature
Orientation of curve
Average velocity over the segment

In addition, for each aircraft type the NEF Model maintains tables of distance versus noise data for various levels of engine thrust. Table B.1, for example, shows effective perceived noise level in decibel (EPNdB) for aircraft types the model can currently process. These noise levels correspond to maximum thrust settings (100 percent engine power). Comparable tables are maintained for 90 percent, 80 percent, etc., engine thrust settings.

FIGURE 1.1

Example of a Track Definition

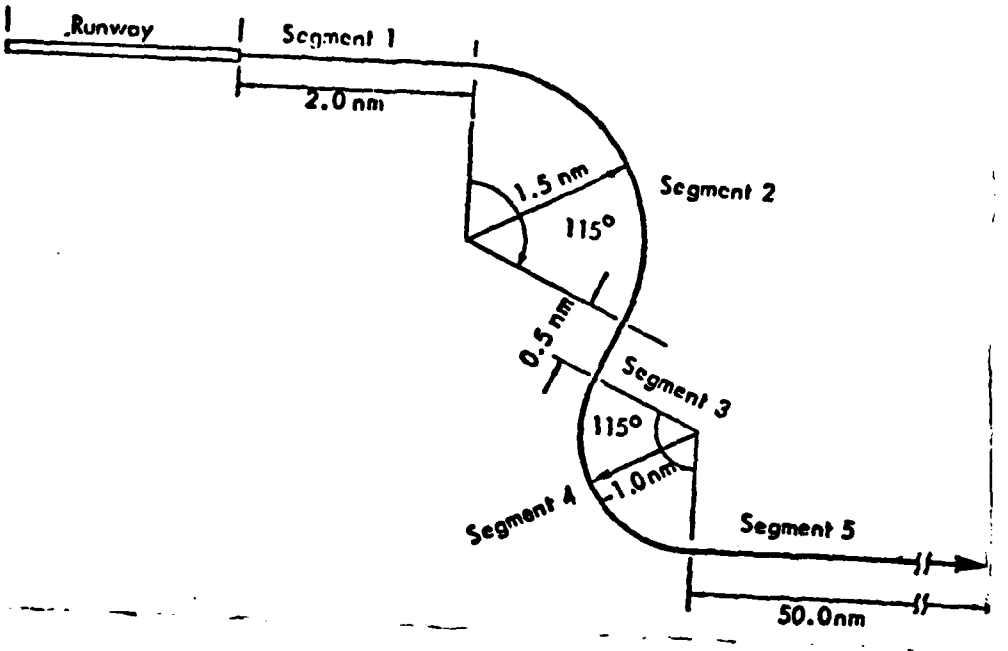


TABLE 1.1

EFFECTIVE PERCEIVED NOISE LEVEL DATA IN dB

(VALUES ARE FOR 100% THRUST)

	AIRCRAFT TYPE	DISTANCE TO AIRCRAFT (feet) 400	600	1,000	2,000	4,000	8,000	10,000
1.	747-200 B	113.2	110.2	106.7	100.9	95.2	86.3	82.3
2.	DC-10	110.3	107.0	102.2	95.1	87.6	79.5	76.8
3.	707-320 B	122.1	119.2	114.7	107.5	99.9	90.8	87.0
4.	707-320 B SAM	113.6	110.0	107.4	102.2	96.2	86.6	83.1
6.	DC-9 SAM	116.0	112.7	109.0	103.0	95.5	86.0	83.0
7.	727-200	115.5	113.1	109.8	105.1	100.1	92.2	88.9
8.	727-200 SAM	116.7	114.2	110.8	106.2	101.3	93.5	90.1
11.	DC-9 30	115.9	113.1	109.1	102.8	95.5	87.3	84.7
13.	BAC 111 400	117.0	114.9	112.2	107.8	102.5	96.4	94.0
14.	CESSNA 182	91.2	89.0	86.1	81.6	76.4	70.2	67.8
15.	DC-8 61 SAM	117.3	114.4	110.5	104.7	97.6	88.4	85.0
16.	DEHAVILAND TWIN OTTER	95.7	93.0	89.4	84.0	77.8	70.5	67.7
17.	737-200	114.8	112.3	108.7	103.4	97.0	88.4	84.9
18.	YS 11 A-200	103.9	101.7	98.8	94.5	89.4	83.2	80.8
19.	SABLINER 60	117.8	115.1	111.1	104.8	98.0	90.	86.8
20.	737 SAM	114.7	112.1	108.5	103.0	96.9	88.4	84.8
21.	7X7	103.2	100.2	96.7	90.4	85.2	76.3	72.3
22.	DCX-200	103.3	100.0	95.2	88.1	80.6	72.5	69.8

Development of Noise Exposure Forecasts

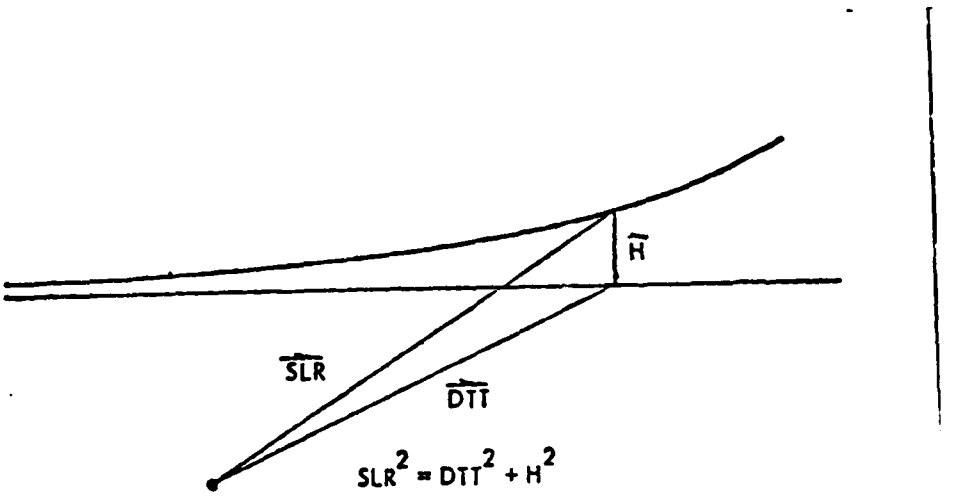
Using all of the previously defined data items, the noise level at a point caused by a single flight can be determined. First, the flight track is examined to determine the point of closest approach to the ground. This location defines the distance of the aircraft from touchdown or liftoff which is used to determine its altitude, thrust, and speed. Using the altitude, the slant distance (see Figure B.2) is determined. The noise level in EPNdB is found by interpolation in the distance versus noise data table. The noise level is then corrected for ground attenuation, shielding, and velocity effects.

Ground Attenuation: The correction for ground attenuation is a function of slant distance and accounts for absorption of noise by dirt, grass, etc. A curve of ground attenuation for 0 degrees elevation angle is available in the program. The EPNdB value is then multiplied by the function - $\sqrt{\text{TAN } 3\beta}$ to correct for the effect of climb angle (β). This function results in zero ground attenuation correction above $\beta = 30$ degrees. Present curves in the model yield maximum noise attenuation during approach of 15 EPNdB at $\beta = 0$ degrees for distances greater than 4,000 feet and during takeoff of ten EPNdB at $\beta = 0$ degrees for distances greater than 10,000 feet.

Shielding: The shielding correction is applied because baseline noise curves are obtained from data measured directly under the aircraft. Often ground points are shielded from full engine noise by aircraft structural components (i.e., wings, fuselage). Airframe interference, of course, depends on the relative positions of the ground point and the in-flight aircraft. The function currently used for this correction is $3(1-\sqrt{\text{SIN } \beta})$ and is applied equally for all aircraft types. This function results in a maximum reduction of 3 EPNdB at $\beta = 0$ degrees.

FIGURE 1.2

Slant Distance Calculation



Velocity: The noise data in the program are for an aircraft speed of 160 knots; a correction is required for other speeds to ensure the proper duration of exposure is applied. The correction is -10 Log(V/160) where V is the actual aircraft ground speed. At slower speeds, therefore, noise impacts are more pronounced due to longer exposure.

To account for the number of operations in developing the noise exposure forecast, NEF for a single aircraft type is computed using the following equation:

$$NEF = EPNL + 10 \ LOG(NOPS) - 88$$

where NOPS = number of operations and EPNL = the noise level for a given aircraft. To determine total NEF at a point on the ground, the above procedure is repeated and summed for every aircraft type and flight track. This operation is shown as the following equation:

$$NEF = \sum_k \sum_j \sum_i \left[L_{ij} + 10 \log \left(ND_{ij} + 16 \ NN_{ij} \right) \right] - 88$$

where:

L_{ij} = Single event noise level

ND = Number of day operations

NN = Number of night operations

i = Aircraft type

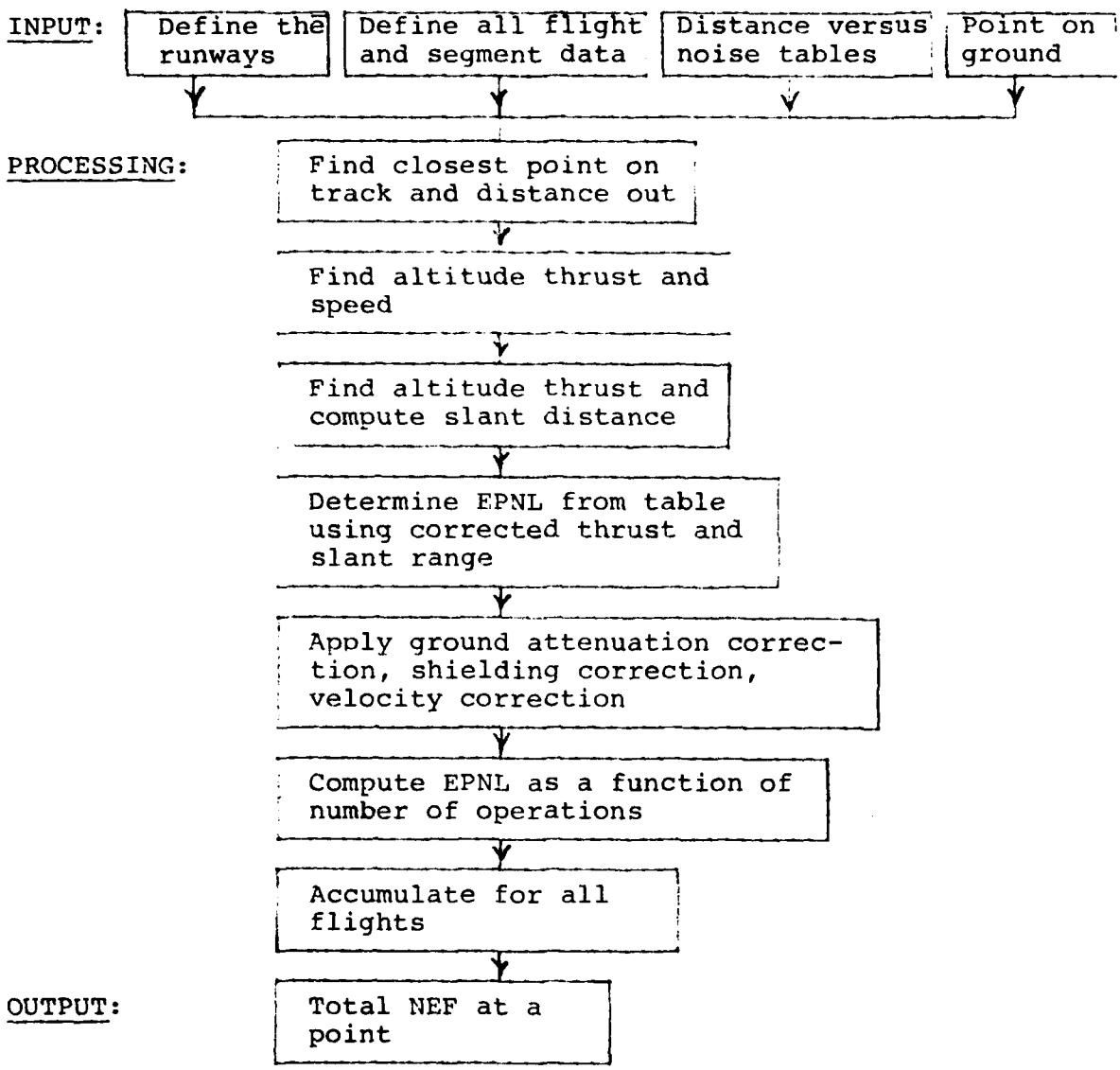
j = Flight track

Noise levels for nighttime operations are perceived as approximately 12 dB more annoying than the same operation during the day (before 10:00 p.m.). This weighting is accomplished by multiplying night operations by the factor 16.

A schematic diagram portraying the development of a NEF value is shown in Figure B.3

FIGURE 1.3

Schematic of the Noise Exposure Forecast Model



1.2 NOISE EXPOSURE DATA

This section presents detailed results for the noise impact analysis of the policy options investigated. It describes for each option the number of people living within the NEF 30 contour at each airport.

Population Living Within the NEF 30 Contours

Tables 1.2 through 1.34 present the NEF 30 affected population for National Airport. Table 1.35 presents the NEF 30 affected population for Dulles Airport.

The analysis shows that 15,491 Maryland residents living close to Baltimore-Washington International are currently exposed to NEF 30 or greater. By 1990 the number of people living within NEF 30 contours at Baltimore will increase to 24,707. The 1990 NEF 30 estimate at Baltimore remained constant in every policy alternative evaluated.

TABLE 1.2

DCA NEF 30 Population for Case 1

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		99,564
MARYLAND		
	Charles County	0
	Montgomery County	16,991
	Prince Georges County	5,680
VIRGINIA		
	Arlington County	11,020
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,708
	City of Fairfax	0
	City of Falls Church	
	TOTAL	145,963

TABLE 1.3

DCA NEF 30 Population for Case 2

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	
	TOTAL	144,921

TABLE 1.4

DCA NEF 30 Population for Case 3

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.5

DCA NEF 30 Population for Case 4

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.6

DCA NEF 30 Population for Case 5

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	131,090

TABLE 1.7

DCA NEF 30 Population for Case 6

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	131,090

TABLE 1.8

DCA NEF 30 Population for Case 7

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.9

DCA NEF 30 Population for Case 8

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.10

DCA NEF 30 Population for Case 9

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,119

TABLE 1.11

DCA NEF 30 Population for Case 10

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.12

DCA NEF 30 Population for Case 11

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.13

DCA NEF 30 Population for Case 12

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.14

DCA NEF 30 Population for Case 13

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	140,611

TABLE 1.15

DCA NEF 30 Population for Case 14

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.16

DCA NEF 30 Population for Case 15

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.17

DCA NEF 30 Population for Case 16

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.18

DCA NEF 30 Population for Case 17

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,119

TABLE 1.19

DCA NEF 30 Population for Case 18

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,302
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,611

TABLE 1.20

DCA NEF 30 Population for Case 19

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,302
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,611

TABLE 1.21

DCA NEF 30 Population for Case 20

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Prince Georges County	9,611
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,119

TABLE 1.22

DCA NEF 30 Population for Case 21

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		84,223
MARYLAND		
	Charles County	0
	Montgomery County	2,350
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	12,300

TABLE 1.23

DCA NEF 30 Population for Case 22

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	140,611

TABLE 1.24

DCA NEF 30 Population for Case 23

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	2,350
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	122,858

TABLE 1.25

DCA NEF 30 Population for Case 24

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		84,223
MARYLAND		
	Charles County	0
	Montgomery County	2,350
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	112,300

TABLE 1.26

DCA NEF 30 Population for Case 25

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,119

TABLE 1.27

DCA NEF 30 Population for Case 26

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,302
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,611

TABLE 1.28

DCA NEF 30 Population for Case 27

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		84,223
MARYLAND		
	Charles County	0
	Montgomery County	2,350
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	112,300

TABLE 1.29

DCA NEF 30 Population for Case 28

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		84,223
MARYLAND		
	Charles County	0
	Montgomery County	2,350
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	112,300

TABLE 1.30

DCA NEF 30 Population for Case 29

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	13,921
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	144,921

TABLE 1.31

DCA NEF 30 Population for Case 30

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		104,302
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	13,746
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	140,611

TABLE 1.32

DCA NEF 30 Population for Case 31

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		94,781
MARYLAND		
	Charles County	0
	Montgomery County	9,611
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	130,119

TABLE 1.33

DCA NEF 30 Population for Case 32

STATE	COUNTY/CITY	EXPOSED POPULATION
WASHINGTON, D.C.		84,223
MARYLAND		
	Charles County	0
	Montgomery County	2,350
	Prince Georges County	1,918
VIRGINIA		
	Arlington County	11,034
	Fairfax County	0
	Prince William County	0
	City of Alexandria	12,775
	City of Fairfax	0
	City of Falls Church	0
	TOTAL	112,300

TABLE 1.35

IAD NEF 30 Population

	FAIRFAX CO., VA.	LOUDOUN CO., VA.	
CASE	Exposed Population	Exposed Population	TOTAL
1	0	815	815
2	0	815	815
3	0	815	815
4	2,400	815	3,215
5	2,400	815	3,215
6	2,400	815	3,215
7	0	815	815
8	2,400	815	3,215
9	2,400	815	3,215
10	0	815	815
11	0	815	815
12	0	815	815
13	0	815	815
14	0	815	815
15	2,400	815	3,215
16	0	815	815
17	0	815	815
18	2,400	815	3,215
19	2,400	815	3,215

TABLE 1.35
(Continued)

IAD NEF 30 Population

CASE	FAIRFAX CO., VA. Exposed Population	LOUDOUN CO., VA. Exposed Population	TOTAL
20	2,400	815	3,215
21	2,400	815	3,215
22	0	815	815
23	0	815	815
24	2,400	815	3,215
25	0	815	815
26	0	815	815
27	0	815	815
28	0	815	815
29	0	815	815
30	0	815	815
31	0	815	815
32	2,400	815	3,215

Zero (0) exposed population for all other counties and cities in Washington, D.C., Maryland, and Virginia for NEF 30.

2.0 EMISSIONS DATA

This section presents the detailed data for the aircraft and automobile emissions analyses. First, it shows for each case and airport the pounds per day of each type of pollutant generated by each type of aircraft. The aircraft are described in terms of noise model classes. Next, it presents a summary of the aircraft emissions for each airport and case. Finally, the results of the automobile emissions analysis are presented.

2.1 Aircraft Emissions

Tables 2.2 through 2.33 present the detailed aircraft emissions data. Table 2.1 lists the types of aircraft included in the study, and the corresponding identifying class numbers assigned to the aircraft and referred to in the following tables:

TABLE 2.1

Identification of Aircraft Types

AIRCRAFT TYPE	CLASS NUMBER
747-200B	1
DC-10	2
707-320B	3
707-320B SAM	4
DC-9-SAM	6
727-200	7
727-200 SAM	8
DC-9-30	11
BAC 111 400	13
CESSNA 182	14
DC-8-61 SAM	15
DEHAVILLAND TWIN OTTER	16
737-200	17
YS-11 A-200	18
SABRELINER 60	19
737 SAM	20
7X7	21
DC-X-200	22

TABLE 2.2

EMISSION ANALYSIS FOR CASE 1 (POUNDS/DAY)

AIRPORT	PARTICULATES	CARBON MONOXIDE	HYDRO - CARBONS	OXIDES OF NITROGEN	TOTAL EMISSIONS
DCA	279.54	7168.68	1977.2	7154.24	16579.66
IAD	243.84	4750.65	2927.94	3776.67	11699.10
BWI	143.5	3689.56	2345.76	2601.46	8780.28

TABLE 2.3

Emission Analysis for Case 2 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
DCA						
	18	21.00	13.86	405.72	89.04	414.12
	20	6.00	3.96	115.92	25.44	118.32
	12	0.0	0.0	0.0	0.0	0.0
	8	213.50	211.36	6167.23	1357.86	6315.32
	6	145.50	96.03	2811.06	616.92	2869.26
	21	0.0	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0
		386.00	325.21	9519.92	2089.26	9717.02	21651.40

EMISSION ANALYSIS FOR CASE 2

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
	18	15.09	10.85	240.60	49.93	347.33
	20	24.00	14.40	319.20	66.24	460.80
	12	0.0	0.0	0.0	0.0	0.0
	8	43.00	36.54	837.90	175.14	1210.86
	21	0.0	0.0	0.0	0.0	0.0
	22	16.00	0.0	447.84	120.00	1472.16
	2	32.00	0.0	895.68	240.00	2944.32
	1	5.00	13.80	360.00	88.00	495.00
	3	10.65	43.03	838.74	662.00	294.79
	11	3.59	2.15	47.75	9.91	65.93
	6	74.00	44.40	984.20	204.24	1420.60
		225.33	165.17	4971.95	1616.26	8814.96	15568.34

EMISSION ANALYSIS FOR CASE 2

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
BWI						
	18	14.99	9.30	249.48	53.97	282.65
	20	21.69	13.57	364.23	76.80	427.27
	12	0.0	0.0	0.0	0.0	0.0
	8	34.28	31.88	856.73	184.10	1002.77
	21	0.0	0.0	0.0	0.0	0.0
	22	12.99	1.95	463.67	129.80	1199.04
	1	2.00	6.00	185.91	45.96	234.85
	3	2.25	9.27	228.15	184.23	62.89
	2	12.99	1.95	463.67	129.80	1199.04
	6	64.77	40.78	1094.36	236.76	1283.77
		167.17	114.69	3904.58	1043.45	5707.30	10770.02
FOR ABOVE 3 CASES		778.50	605.07	18396.45	4748.96	24239.28	47989.76

TABLE 2.4

Emission Analysis for Case 3 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	22.00	14.52	425.04	93.28	433.84	
	20	3.90	2.57	75.35	16.54	76.91	
	12	0.0	0.0	0.0	0.0	0.0	
	8	191.10	189.19	5538.07	1215.40	5652.73	
	6	131.00	86.46	2530.92	555.44	2583.32	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		346.00	292.74	8569.37	1880.65	8746.80	19489.56
EMISSION ANALYSIS FOR CASE 3							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	8.09	4.85	107.60	22.33	155.33	
	20	26.40	15.84	351.12	72.86	506.88	
	12	0.0	0.0	0.0	0.0	0.0	
	8	51.10	44.46	1019.44	213.09	1473.21	
	21	0.0	0.0	0.0	0.0	0.0	
	22	17.00	0.0	475.83	127.50	1564.17	
	2	36.00	0.0	1007.64	270.00	3312.35	
	1	6.00	16.56	432.00	106.56	714.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	83.50	50.10	1110.56	230.46	1603.20	
		242.33	176.99	5390.71	1714.71	9692.84	16975.25
EMISSION ANALYSIS FOR CASE 3							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
[illegible]							
	18	13.99	8.68	232.84	50.37	273.14	
	20	22.49	13.94	374.21	80.96	438.98	
	12	0.0	0.0	0.0	0.0	0.0	
	8	31.48	29.28	786.79	169.07	920.91	
	21	0.0	0.0	0.0	0.0	0.0	
	22	11.99	1.80	428.19	119.82	1106.80	
	1	3.00	9.00	278.86	68.97	359.82	
	3	2.25	9.27	226.15	184.23	62.88	
	2	13.99	7.10	499.55	139.79	1291.27	
	6	65.97	40.90	1097.69	237.48	1287.67	
		165.17	114.96	3924.28	1050.69	5741.48	10831.40
FOR ABOVE 3 CASES		755.50	584.69	17884.36	4646.05	24181.12	47296.21

TABLE 2.5

Emission Analysis for Case 4 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
OCA						
	14	22.00	14.52	425.04	93.28	433.84
	20	3.00	1.98	57.96	12.72	59.16
	12	0.0	0.0	0.0	0.0	0.0
	8	165.90	164.24	4807.78	1055.12	4907.32
	6	118.10	77.95	2281.69	500.74	2329.95
	21	0.0	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0
		309.00	258.69	7572.46	1661.87	7729.24	17222.25
		EMISSION ANALYSIS FOR CASE 4				
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
IAD						
	18	13.09	10.85	240.60	49.93	347.33
	20	25.20	15.12	336.16	69.66	483.84
	12	0.0	0.0	0.0	0.0	0.0
	8	73.50	63.94	1466.32	306.49	2119.00
	21	0.0	0.0	0.0	0.0	0.0
	22	17.00	0.0	475.83	127.50	1564.17
	2	37.00	0.0	1035.62	277.50	3404.36
	1	7.00	22.05	574.00	142.05	952.00
	5	10.65	43.03	830.79	662.00	294.79
	11	3.59	2.15	47.75	9.91	65.93
	6	90.30	54.78	1200.99	249.23	1733.76
		225.33	211.36	6217.06	1894.19	10960.17	19290.78
		EMISSION ANALYSIS FOR CASE 4				
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
	1	13.99	8.68	232.54	50.37	273.14
	20	20.39	12.64	339.29	73.40	398.01
	12	0.0	0.0	0.0	0.0	0.0
	8	36.38	31.24	909.18	195.37	1064.17
	21	0.0	0.0	0.0	0.0	0.0
	22	14.99	2.25	525.23	149.77	1382.51
	2	2.00	6.00	185.91	45.98	239.88
	5	2.25	9.27	226.15	164.23	62.88
	2	13.99	2.10	499.55	139.79	1291.27
	6	69.17	39.16	1051.12	227.41	1733.05
		167.17	113.93	3979.26	1066.32	5945.99	11105.41
FOR ABOVE 3 CASES		759.50	583.97	17768.79	4622.38	24642.30	47618.43

TABLE 2.6

Emission Analysis for Case 5 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	2.40	1.58	46.37	10.18	47.33	
	12	0.0	0.0	0.0	0.0	0.0	
	8	140.70	139.29	4077.48	894.85	4161.90	
	6	106.90	70.55	2065.31	453.26	2105.97	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		271.00	225.29	6594.87	1447.32	6731.41	14998.90
EMISSION ANALYSIS FOR CASE 5							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	17.09	10.25	227.30	47.17	328.13	
	20	15.00	9.00	199.50	41.40	286.00	
	12	0.0	0.0	0.0	0.0	0.0	
	8	86.10	74.91	1717.69	359.04	2482.26	
	21	0.0	0.0	0.0	0.0	0.0	
	22	24.00	0.0	671.76	180.00	2208.24	
	2	39.00	0.0	1091.61	292.50	3588.36	
	1	9.00	24.84	648.00	159.84	1071.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	71.90	43.14	956.27	198.44	1380.48	
		276.33	207.32	6398.66	1950.30	11710.19	20266.47
EMISSION ANALYSIS FOR CASE 5							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	19.49	12.08	324.32	70.16	380.45	
	12	0.0	0.0	0.0	0.0	0.0	
	8	35.68	33.18	891.70	191.61	1043.70	
	21	0.0	0.0	0.0	0.0	0.0	
	22	16.99	2.55	606.60	169.74	1567.97	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	60.77	37.68	1011.20	218.77	1186.22	
		164.17	111.38	3942.58	1060.68	5953.28	11067.91
FOR ABOVE 3 CASES		711.50	543.99	16936.11	4458.30	24394.88	46333.28

TABLE 2.7

Emission Analysis for Case 6 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	0.90	0.59	17.39	3.82	17.75	
	12	0.0	0.0	0.0	0.0	0.0	
	8	116.90	115.73	3387.76	743.48	3457.90	
	6	94.20	62.17	1819.94	399.41	1857.62	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		233.00	192.36	5630.81	1235.75	5747.39	12806.30
		EMISSION ANALYSIS FOR CASE 6					
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	15.09	9.05	200.70	41.65	289.73	
	20	24.30	14.58	323.19	67.07	466.56	
	12	0.0	0.0	0.0	0.0	0.0	
	8	99.40	86.48	1983.03	414.50	2865.70	
	21	0.0	0.0	0.0	0.0	0.0	
	22	33.00	0.0	923.67	247.50	3036.33	
	2	41.00	0.0	1147.59	307.50	3772.40	
	1	11.00	30.36	792.00	195.36	1309.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.69	2.15	47.75	9.91	68.93	
	6	99.30	59.58	1320.69	274.07	1906.56	
		337.33	245.23	7577.39	2219.55	14009.98	24052.15
		EMISSION ANALYSIS FOR CASE 6					
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
	1	13.99	8.65	232.84	50.37	273.14	
	3	23.09	14.31	384.19	83.12	450.69	
	12	0.0	0.0	0.0	0.0	0.0	
	8	30.08	27.98	751.82	161.56	879.98	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.99	2.40	570.91	159.76	1475.74	
	1	3.00	9.00	278.86	68.97	359.82	
	3	2.25	9.27	226.15	184.23	62.88	
	2	13.99	2.10	499.55	139.79	1291.27	
	6	66.77	41.40	1110.99	240.36	1303.28	
		169.17	115.12	4055.32	1088.15	6096.80	11355.39
FOR ABOVE 3 CASES		739.49	552.71	17263.52	4543.45	25854.17	48213.84

TABLE 2.8

Emission Analysis for Case 7 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	5.40	3.56	104.33	22.90	106.49	
	12	0.0	0.0	0.0	0.0	0.0	
	8	204.40	202.36	5923.51	1299.98	6046.15	
	6	140.20	92.53	2708.66	594.45	2764.74	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		371.00	312.31	9142.21	2006.37	9331.49	20792.38
EMISSION ANALYSIS FOR CASE 7							
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	24.90	14.94	331.17	68.72	478.08	
	12	0.0	0.0	0.0	0.0	0.0	
	8	45.50	39.58	907.72	189.73	1311.76	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	33.00	0.0	923.67	247.50	3036.32	
	1	6.00	16.56	432.00	106.56	714.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	77.60	46.56	1032.08	214.18	1469.92	
		234.33	173.68	5173.62	1661.03	9121.27	16129.61
EMISSION ANALYSIS FOR CASE 7							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	14.99	9.30	249.48	53.97	292.65	
	20	23.09	14.31	384.19	83.12	450.69	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.18	20.93	804.27	172.83	941.38	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	82.86	
	2	13.99	2.10	499.55	139.79	1291.27	
	6	67.67	41.95	1125.96	243.60	1320.84	
		169.17	114.80	3939.37	1053.31	5798.62	10906.11
FOR ABOVE 3 CASES		774.49	600.79	18255.21	4720.71	24251.39	47828.09

TABLE 2.9

Emission Analysis for Case 8 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	69.04	414.12	
	20	3.00	1.98	57.96	12.72	59.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	165.90	164.24	4807.78	1055.12	4907.32	
	6	114.10	77.95	2281.69	500.74	2328.93	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		304.00	258.03	7554.14	1657.63	7709.52	17178.31
EMISSION ANALYSIS FOR CASE 8							
IAD							
	18	19.09	10.85	240.60	49.93	347.33	
	20	25.20	15.12	335.16	69.55	483.84	
	12	0.0	0.0	0.0	0.0	0.0	
	8	73.50	63.94	1466.32	306.49	2119.00	
	21	0.0	0.0	0.0	0.0	0.0	
	22	17.00	0.0	475.83	127.50	1564.17	
	2	37.00	0.0	1035.43	277.50	3404.36	
	1	8.00	22.08	576.00	142.08	952.00	
	3	14.65	43.03	837.79	662.30	294.79	
	11	3.69	2.15	47.75	9.91	68.93	
	6	90.30	54.19	1299.99	249.23	1733.76	
		288.33	211.36	6217.06	1894.19	10966.17	19290.78
EMISSION ANALYSIS FOR CASE 6							
[illegible]							
	18	10.99	8.68	232.84	50.37	275.14	
	20	20.39	12.64	339.29	73.40	398.01	
	12	0.0	0.0	0.0	0.0	0.0	
	8	84.36	33.84	909.18	195.37	1064.17	
	21	0.0	0.0	0.0	0.0	0.0	
	22	14.99	2.25	525.23	149.77	1383.51	
	1	2.00	6.00	185.91	45.98	239.58	
	3	2.25	9.27	226.15	184.23	62.88	
	2	13.99	2.10	499.55	139.79	1291.27	
	6	64.17	39.16	1051.12	227.41	1233.05	
		167.17	113.93	3979.26	1066.32	5945.89	11105.41
FOR ABOVE 3 CASES		758.50	583.31	17749.46	4618.14	24623.59	47574.50

TABLE 2.10

Emission Analysis for Case 9 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	0.90	0.59	17.39	3.82	17.75	
	12	0.0	0.0	0.0	0.0	0.0	
	8	116.90	115.73	3387.76	743.48	3457.90	
	6	92.20	60.85	1781.30	390.93	1818.18	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		231.00	191.04	5592.17	1227.27	5707.95	12718.41
EMISSION ANALYSIS FOR CASE 9							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	15.09	9.05	200.70	41.65	289.73	
	20	24.30	14.58	323.19	67.07	466.56	
	12	0.0	0.0	0.0	0.0	0.0	
	8	99.40	86.48	1983.03	414.50	2865.70	
	21	0.0	0.0	0.0	0.0	0.0	
	22	33.00	0.0	923.67	247.50	3036.33	
	2	41.00	0.0	1147.59	307.50	3772.40	
	1	11.00	30.36	797.00	195.36	1309.00	
	3	10.65	43.03	836.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	99.30	59.58	1320.69	274.07	1906.56	
		337.33	245.23	7577.39	2219.55	14009.98	24052.15
EMISSION ANALYSIS FOR CASE 9							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
	18	13.99	8.68	232.84	50.37	273.14	
	20	23.09	14.31	384.19	83.12	450.69	
	12	0.0	0.0	0.0	0.0	0.0	
	8	30.08	27.98	751.82	161.56	879.98	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.99	7.40	570.91	159.76	1475.74	
	1	3.00	9.00	278.86	68.97	359.82	
	3	2.25	9.27	226.15	184.23	62.88	
	2	13.99	2.10	499.55	139.79	1291.27	
	6	66.77	41.40	1110.99	240.36	1303.28	
		169.17	115.12	4055.32	1088.15	6096.80	11355.39
FOR ABOVE 3 CASES		737.49	551.39	17224.87	4534.96	25814.73	48125.96

TABLE 2.11

Emission Analysis for Case 10 (Pounds/Day)

AMES A/C TYPE	ASS/CLP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
TCA					
18	20.00	13.20	356.40	54.60	394.40
20	5.40	4.55	105.21	29.26	146.01
12	0.0	0.0	0.0	0.0	0.0
6	194.20	124.73	5705.36	1251.91	5815.28
8	140.40	92.66	2712.53	696.20	2768.69
21	0.0	0.0	0.0	0.0	0.0
22	2.00	0.24	39.20	10.40	122.52
7	16.00	0.58	470.40	134.00	1470.24
	380.00	305.27	9442.28	2005.36	10710.29	22556.31

EMISSION ANALYSIS FOR CASE 10

AMES A/C TYPE	ASS/CLP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
TAF					
18	18.09	10.85	240.60	49.93	347.33
20	23.40	14.04	311.22	64.58	449.28
12	0.0	0.0	0.0	0.0	0.0
6	39.20	24.10	782.04	163.46	1130.13
21	0.0	0.0	0.0	0.0	0.0
22	17.00	0.0	475.83	127.50	1564.17
5	31.00	0.0	867.69	232.50	2852.31
1	9.00	11.04	244.00	71.04	476.00
3	10.66	43.03	335.79	662.00	294.79
11	3.59	2.15	47.75	9.91	68.93
4	71.40	42.54	949.62	197.26	1370.86
	214.33	150.06	4001.53	1577.99	8553.80	15091.37

EMISSION ANALYSIS FOR CASE 10

AMES A/C TYPE	ASS/CLP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
	24.59	9.30	249.49	53.97	292.65
	27.99	12.63	344.27	74.46	403.86
	0.0	0.0	0.0	0.0	0.0
	71.58	31.23	839.24	190.34	982.21
21	0.0	0.0	0.0	0.0	0.0
22	10.99	1.95	463.87	129.90	1199.04
1	2.00	0.00	185.91	45.99	239.88
5	3.25	9.27	226.15	184.23	62.88
2	12.99	1.95	463.87	129.80	1199.04
6	62.67	38.85	1042.80	225.61	1223.29
	162.17	111.37	3815.58	1024.22	5602.94	10554.11

FOR ABOVE 3 CASES

762.50 577.70 18059.30 4697.77 24867.03 48201.79

TABLE 2.12

Emission Analysis for Case 11 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	20.00	13.20	386.40	84.80	394.40	
	20	7.20	4.75	139.10	30.53	141.98	
	12	0.0	0.0	0.0	0.0	0.0	
	8	182.70	180.87	5294.64	1161.97	5404.26	
	6	135.10	89.17	2610.13	572.82	2664.17	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	33.00	5.94	970.20	257.40	3032.36	
		378.00	293.93	9400.46	2107.52	11637.18	23439.09
		EMISSION ANALYSIS FOR CASE 11					

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	23.40	14.04	311.22	64.58	449.28	
	12	0.0	0.0	0.0	0.0	0.0	
	8	33.60	29.23	670.32	140.11	968.69	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	66.93	
	6	69.00	41.40	917.70	190.44	1324.80	
		208.33	151.75	4601.91	1533.01	8162.25	14448.92
		EMISSION ANALYSIS FOR CASE 11					

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	14.99	9.30	249.48	53.97	292.65	
	20	20.99	13.01	349.26	75.56	409.71	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.18	29.93	804.27	172.63	941.38	
	21	0.0	0.0	0.0	0.0	0.0	
	22	11.99	1.80	428.19	119.82	1106.80	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	62.77	38.92	1044.47	225.97	1225.24	
		160.17	110.17	3751.59	1008.16	5477.58	10347.49
FOR ABOVE 3 CASES		746.50	555.84	17753.96	4648.69	25277.01	48235.50

TABLE 2.13

Emission Analysis for Case 12 (Pounds/Day)

AIRPORT	ANLS A/C TYPE	ANLZ/LTO CYCLES	PARTICULATES	CARBON MONOX.	HYDROCARBONS	OXIDES OF NITROGEN	
ICA							
	18	21.00	13.96	405.72	89.04	414.12	
	20	9.33	6.14	[illegible]	39.43	185.40	
	12	0.0	0.0	0.0	0.0	0.0	
	8	[illegible]	159.39	4665.78	[illegible]	[illegible]	
	6	[illegible]	85.26	[illegible]	[illegible]	2577.40	
	21	0.0	0.0	0.0	0.0	0.0	
	22	[illegible]	0.24	39.20	10.40	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
		[illegible]	274.71	9256.09	[illegible]	12562.41	24192.39

EMISSION ANALYSIS FOR CASE 12

AIRPORT	ANLS A/C TYPE	ANLZ/LTO CYCLES	PARTICULATES	CARBON MONOX.	HYDROCARBONS	OXIDES OF NITROGEN	
IAD							
	[illegible]	19.09	10.85	240.60	49.93	347.33	
	20	20.70	12.42	275.21	57.13	397.44	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.90	[illegible]	656.35	137.19	[illegible]	
	21	0.0	0.0	0.0	0.0	0.0	
	22	[illegible]	0.0	419.65	112.50	[illegible]	
	2	31.00	0.0	867.69	232.50	2852.31	
	[illegible]	4.00	[illegible]	285.00	71.04	476.00	
	[illegible]	10.65	[illegible]	[illegible]	662.00	244.79	
	[illegible]	[illegible]	[illegible]	47.75	9.91	66.93	
	6	62.46	37.44	[illegible]	172.22	[illegible]	
		[illegible]	145.56	4464.25	1504.43	7963.52	14077.75

EMISSION ANALYSIS FOR CASE 12

AIRPORT	ANLS A/C TYPE	ANLZ/LTO CYCLES	PARTICULATES	CARBON MONOX.	HYDROCARBONS	OXIDES OF NITROGEN	
	[illegible]	14.49	9.30	249.48	53.97	292.65	
	[illegible]	[illegible]	13.61	349.26	75.56	409.71	
	[illegible]	[illegible]	[illegible]	0.0	0.0	0.0	
	[illegible]	[illegible]	[illegible]	786.79	169.07	920.91	
	[illegible]	0.0	0.0	0.0	0.0	0.0	
	[illegible]	[illegible]	[illegible]	428.19	119.82	1106.80	
	1	2.00	6.00	185.91	45.98	239.85	
	3	2.25	9.27	226.15	154.23	62.88	
	2	12.99	1.95	463.87	129.60	1194.04	
	6	62.47	38.73	1029.48	224.69	1719.39	
		159.17	109.33	3729.11	1003.32	5451.27	10293.03
FOR ABOVE 3 CASES							
		730.50	529.60	17449.45	4606.95	25977.19	48563.17

TABLE 2.14

Emission Analysis for Case 13 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	11.40	7.52	220.25	48.34	224.81	
	12	0.0	0.0	0.0	0.0	0.0	
	8	140.70	139.29	4077.48	894.65	4161.90	
	6	126.90	83.75	2451.71	538.06	2502.47	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.29	
		367.00	256.13	9066.14	2077.28	13276.14	24675.69
EMISSION ANALYSIS FOR CASE 13							
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	18.90	11.34	251.37	52.16	362.88	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.20	28.01	642.39	134.27	928.32	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1350.15	
	2	31.00	0.0	867.69	232.50	2792.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	57.90	34.74	770.07	159.80	1111.68	
		191.33	141.17	4366.50	1484.12	7822.37	13814.15
EMISSION ANALYSIS FOR CASE 13							
BWI							
	18	14.99	9.30	249.48	53.97	292.65	
	20	20.39	12.64	339.29	73.40	398.01	
	12	0.0	0.0	0.0	0.0	0.0	
	8	30.08	27.98	751.82	161.56	879.95	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.99	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	60.47	37.49	1006.27	717.69	1160.37	
		156.17	106.57	3686.58	996.44	5451.84	10241.43
FOR ABOVE 3 CASES		714.50	503.87	17119.23	4557.84	26550.35	48731.27

TABLE 2.15

Emission Analysis for Case 14 (Pounds/Day)

AIRPORT	AMIS A/C TYPE	ARR/DEP CYCLES	PARTIC- ULATES	CARBON MONOX.	HYDRO- CARBONS	OXIDES OF NITROGEN	
DCA							
	18	27.00	13.86	405.72	89.04	414.12	
	20	[illegible]	2.18	63.76	[illegible]	65.08	
	12	0.0	0.0	0.0	0.0	0.0	
	8	[illegible]	[illegible]	4503.49	[illegible]	4596.73	
	6	114.[illegible]	75.44	[illegible]	464.63	[illegible]	
	21	0.0	0.0	0.0	0.0	0.0	
	[illegible]	[illegible]	[illegible]	39.[illegible]	10.40	[illegible]	
	[illegible]	[illegible]	[illegible]	470.40	[illegible]	[illegible]	
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18573.14

EMISSION ANALYSIS FOR CASE [illegible]

AIRPORT	AMIS A/C TYPE	ARR/DEP CYCLES	PARTIC- ULATES	CARBON MONOX.	HYDRO- CARBONS	OXIDES OF NITROGEN	
[illegible]							
	18	18.09	10.85	240.60	49.93	347.33	
	20	[illegible]	[illegible]	347.13	[illegible]	[illegible]	
	[illegible]	[illegible]	0.0	[illegible]	[illegible]	0.0	
	[illegible]	[illegible]	54.20	[illegible]	[illegible]	1796.11	
	21	[illegible]	[illegible]	[illegible]	[illegible]	0.0	
	22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	36.00	[illegible]	1007.64	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18200.41

EMISSION ANALYSIS FOR CASE [illegible]

AIRPORT	AMIS A/C TYPE	ARR/DEP CYCLES	PARTIC- ULATES	CARBON MONOX.	HYDRO- CARBONS	OXIDES OF NITROGEN	
	[illegible]	[illegible]	[illegible]	232.84	[illegible]	273.14	
	[illegible]	[illegible]	[illegible]	344.27	74.46	[illegible]	
	[illegible]	[illegible]	[illegible]	0.0	0.0	0.0	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1023.24	
	[illegible]	0.0	0.0	0.0	0.0	0.0	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	1	3.00	9.00	[illegible]	68.97	[illegible]	
	3	2.25	[illegible]	[illegible]	184.23	[illegible]	
	2	[illegible]	[illegible]	[illegible]	149.77	[illegible]	
	6	[illegible]	[illegible]	[illegible]	[illegible]	1235.00	
		165.17	[illegible]	3972.54	1063.27	[illegible]	10999.61
FOR ABOVE 3 CASES							
		745.50	559.03	17489.05	4581.47	25143.62	47773.16

TABLE 2.16

Emission Analysis for Case 15 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	22.00	14.52	425.04	93.28	433.84	
	20	3.30	2.18	63.76	13.99	65.08	
	12	0.0	0.0	0.0	0.0	0.0	
	8	144.90	143.45	4199.20	921.56	4286.14	
	6	109.80	72.47	2121.33	465.55	2165.25	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	33.00	5.94	970.20	257.40	3032.36	
		313.00	238.56	7779.52	1751.79	9982.67	19752.52
		EMISSION ANALYSIS FOR CASE 15					

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	26.10	15.66	347.13	72.04	501.12	
	12	0.0	0.0	0.0	0.0	0.0	
	8	65.80	57.25	1312.71	274.39	1897.01	
	21	0.0	0.0	0.0	0.0	0.0	
	22	19.00	0.0	531.81	142.50	1749.19	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.94	68.93	
	6	89.10	53.46	1185.03	245.92	1710.72	
		267.33	193.44	5659.50	1760.22	9896.37	17509.52
		EMISSION ANALYSIS FOR CASE 15					

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
CMI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	20.39	12.64	339.29	73.40	398.01	
	12	0.0	0.0	0.0	0.0	0.0	
	8	35.68	33.18	891.70	191.61	1043.70	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	62.67	38.98	1046.13	226.33	1227.19	
		163.17	112.64	3849.74	1031.53	5642.87	10636.79
FOR ABOVE 3 CASES							
		743.50	544.64	17288.75	4543.53	25521.92	47898.83

TABLE 2.17

Emission Analysis for Case 16 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
OCA							
	16	22.00	14.52	425.04	93.28	433.84	
	20	3.60	2.38	69.55	15.26	70.99	
	12	0.0	0.0	0.0	0.0	0.0	
	8	129.40	128.20	3752.91	823.62	3830.61	
	6	103.40	68.57	2007.35	440.54	2046.91	
	21	0.0	0.0	0.0	0.0	0.0	
	22	2.00	0.24	39.20	10.40	122.52	
	7	0.0	0.0	0.0	0.0	0.0	
		261.00	213.91	6294.04	1383.10	6506.86	14397.91
		EMISSION ANALYSIS FOR CASE 16					
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.30	16.38	363.09	75.35	524.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	54.60	47.50	1089.27	227.68	1574.12	
	21	0.0	0.0	0.0	0.0	0.0	
	22	17.00	0.0	475.83	127.50	1564.17	
	7	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	65.93	
	6	87.10	52.26	1156.43	240.40	1672.32	
		253.33	183.22	5369.44	1696.30	9374.10	16623.05
		EMISSION ANALYSIS FOR CASE 16					
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
	16	13.99	8.68	232.84	50.37	273.14	
	20	21.59	13.39	359.24	77.72	421.42	
	12	0.0	0.0	0.0	0.0	0.0	
	8	35.68	33.18	891.70	191.61	1043.70	
	21	0.0	0.0	0.0	0.0	0.0	
	22	11.99	1.80	428.19	119.82	1106.80	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	65.67	40.71	1092.70	236.40	1281.82	
		166.17	114.97	3880.59	1035.94	5628.68	10660.18
FOR ABOVE 3 CASES		680.50	512.10	15544.06	4115.34	21509.65	41681.14

TABLE 2.18

Emission Analysis for Case 17 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	22.00	14.52	425.04	93.28	433.84	
	20	3.90	2.57	75.35	16.54	76.91	
	12	0.0	0.0	0.0	0.0	0.0	
	8	114.10	112.96	3306.62	725.66	3375.08	
	6	96.00	64.68	1893.36	415.52	1932.56	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.20	
		305.00	206.43	7611.35	1758.01	11791.22	21367.01
EMISSION ANALYSIS FOR CASE 17							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.30	16.38	363.09	75.35	524.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	50.40	43.85	1005.48	210.17	1453.03	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	244.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	85.30	51.18	1134.49	235.43	1637.76	
		245.33	178.48	5205.73	1658.82	9034.44	16077.47
EMISSION ANALYSIS FOR CASE 17							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	21.89	13.57	364.23	78.80	427.27	
	12	0.0	0.0	0.0	0.0	0.0	
	8	34.28	31.88	856.73	164.10	1002.77	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	164.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	65.77	40.78	1094.36	236.76	1283.77	
		166.17	114.07	3887.95	1039.85	5687.79	10729.65
FOR ABOVE 3 CASES		716.50	498.98	16705.03	4456.68	26513.45	48174.13

TABLE 2.19

Emission Analysis for Case 18 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	49.04	414.12	
	20	1.20	0.79	23.18	5.09	25.66	
	12	0.0	0.0	0.0	0.0	0.0	
	4	107.80	109.72	3124.04	685.61	3188.72	
	5	91.00	60.06	1756.12	385.64	1794.52	
	21	0.0	0.0	0.0	0.0	0.0	
	22	2.30	0.24	39.20	10.40	122.52	
	2	10.00	2.88	470.40	124.80	1470.24	
		234.00	184.55	5820.66	1300.77	7013.78	14319.76
EMISSION ANALYSIS FOR CASE 18							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
LAX							
	18	15.09	9.05	200.70	41.65	289.73	
	20	20.70	16.02	355.11	73.69	512.64	
	12	0.0	0.0	0.0	0.0	0.0	
	4	95.20	80.82	1899.24	396.99	2744.61	
	21	0.0	0.0	0.0	0.0	0.0	
	22	24.00	0.1	671.76	150.00	2204.24	
	1	38.00	0.0	1065.82	245.00	3466.37	
	3	10.00	27.40	720.70	147.60	1160.00	
	5	20.65	43.03	838.74	662.90	244.74	
	11	3.60	2.15	47.76	9.91	66.93	
	9	102.10	61.86	1371.23	286.56	1979.52	
		326.23	242.54	7168.15	2111.30	12784.81	22306.92
EMISSION ANALYSIS FOR CASE 18							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
SFO							
	18	13.99	8.68	232.84	50.37	273.14	
	20	23.99	13.57	364.23	78.80	427.27	
	12	0.0	0.0	0.0	0.0	0.0	
	4	34.98	32.53	874.21	187.86	1023.24	
	21	0.0	0.0	0.0	0.0	0.0	
	22	13.99	2.10	499.55	139.79	1291.27	
	1	2.00	0.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	13.99	2.10	499.55	139.79	1291.27	
	6	64.07	40.96	1099.35	237.84	1284.62	
		169.17	115.20	3981.79	1064.65	5898.58	11060.22
FOR ABOVE 3 CASES		734.49	542.29	16970.63	4476.82	25697.17	47686.90

TABLE 2.20

Emission Analysis for Case 19 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	1.50	0.99	28.98	6.36	29.58	
	12	0.0	0.0	0.0	0.0	0.0	
	8	98.00	97.02	2840.04	623.28	2898.84	
	6	87.50	57.75	1690.50	371.00	1725.50	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	31.00	5.58	911.40	241.80	2846.54	
		239.00	175.20	5876.63	1331.48	7916.62	15299.93
EMISSION ANALYSIS FOR CASE 19							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	15.09	9.05	200.70	41.65	289.73	
	20	25.50	15.30	339.15	70.38	489.60	
	12	0.0	0.0	0.0	0.0	0.0	
	8	103.60	90.13	2066.82	432.01	2966.76	
	21	0.0	0.0	0.0	0.0	0.0	
	22	31.00	0.0	867.69	232.50	2852.31	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	286.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.92	
	6	103.90	62.34	1381.07	286.76	1994.88	
		328.33	233.05	6898.44	2038.75	12305.30	21475.54
EMISSION ANALYSIS FOR CASE 19							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	21.59	13.39	359.24	77.72	421.42	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.88	30.58	821.76	176.58	961.84	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.99	2.40	570.91	159.76	1475.74	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.86	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	64.47	39.97	1072.74	232.08	1258.41	
		166.17	112.22	3933.42	1056.53	5892.35	10994.52
FOR ABOVE 3 CASES		733.50	520.47	16708.49	4426.76	26114.27	47769.99

TABLE 2.21

Emission Analysis for Case 20 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
OCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	2.10	1.39	40.57	8.90	41.41	
	12	0.0	0.0	0.0	0.0	0.0	
	8	83.30	82.47	2414.03	529.79	2464.01	
	6	80.60	53.20	1557.19	341.74	1589.43	
	21	0.0	0.0	0.0	0.0	0.0	
	22	2.00	0.24	30.20	10.40	122.52	
	2	48.00	5.64	1411.20	374.40	4410.71	
		237.00	159.79	5867.91	1354.27	9042.21	16424.17
EMISSION ANALYSIS FOR CASE 20							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	17.09	10.25	227.30	47.17	328.13	
	20	27.00	16.20	359.10	74.52	518.40	
	12	0.0	0.0	0.0	0.0	0.0	
	8	95.90	83.43	1913.20	399.90	2764.79	
	21	0.0	0.0	0.0	0.0	0.0	
	22	27.00	0.0	755.73	202.50	2484.27	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	104.10	62.46	1344.53	287.32	1998.74	
		320.33	228.57	6642.08	1986.46	11786.32	20683.82
EMISSION ANALYSIS FOR CASE 20							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
		13.99	8.68	222.84	50.37	273.14	
		20.99	12.54	339.29	73.40	398.01	
		0.0	0.0	0.0	0.0	0.0	
		34.99	34.53	874.21	187.86	1023.24	
	21	0.0	0.0	0.0	0.0	0.0	
	22	10.99	1.99	455.87	129.80	1199.04	
	1	3.00	6.00	185.91	45.96	239.88	
	3	2.25	9.27	226.15	164.23	62.88	
	2	12.99	1.99	461.87	129.80	1199.04	
	6	62.57	31.79	1041.14	225.25	1221.34	
		162.17	111.80	3927.27	1026.69	5616.55	10582.32
FOR ABOVE 3 CASES		719.50	500.16	16377.25	4367.82	26445.08	47690.31

TABLE 2.22

Emission Analysis for Case 21 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	2.10	1.39	40.57	8.90	41.41	
	12	0.0	0.0	0.0	0.0	0.0	
	8	71.40	70.69	2069.17	454.10	2112.01	
	6	75.50	49.83	1458.66	320.12	1488.86	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.96	1793.40	475.80	5605.24	
		237.00	147.46	5885.12	1379.17	10029.24	17440.98
		EMISSION ANALYSIS FOR CASE 21					
[illegible]	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
[illegible]							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.30	16.38	363.09	75.35	524.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	91.00	79.17	1815.45	379.47	2623.53	
	21	0.0	0.0	0.0	0.0	0.0	
	22	22.00	0.0	615.78	165.00	2024.27	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	66.93	
	6	102.70	61.62	1365.91	283.45	1971.64	
		310.33	224.24	6443.05	1928.65	11183.08	19779.02
		EMISSION ANALYSIS FOR CASE 21					
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	19.79	12.27	329.31	71.24	386.30	
	12	0.0	0.0	0.0	0.0	0.0	
	8	36.38	33.84	909.18	195.37	1064.17	
	21	0.0	0.0	0.0	0.0	0.0	
	22	13.99	2.10	499.55	139.79	1291.27	
	1	2.00	6.00	185.91	45.98	239.66	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	61.77	38.30	1027.84	222.37	1205.73	
		163.17	112.39	3874.64	1039.16	5722.41	10748.59
FOR ABOVE 3 CASES		710.50	484.09	16202.80	4346.97	26934.73	47968.59

TABLE 2.23

Emission Analysis for Case 22 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.66	405.72	89.04	414.12	
	20	8.70	5.74	166.08	36.69	171.56	
	12	0.0	0.0	0.0	0.0	0.0	
	8	139.30	137.91	4036.91	885.95	4120.49	
	6	120.00	79.20	2316.40	508.80	2365.40	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.29	
		356.00	248.41	8840.10	2027.67	13045.41	24161.59
EMISSION ANALYSIS FOR CASE 22							

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	21.00	12.60	279.30	57.96	403.20	
	12	0.0	0.0	0.0	0.0	0.0	
	8	33.60	29.23	670.32	140.11	968.69	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	63.40	38.04	843.22	174.98	1217.26	
		200.33	146.95	4495.51	1510.93	8006.66	14162.05
EMISSION ANALYSIS FOR CASE 22							

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	14.99	9.30	249.48	53.97	292.65	
	20	21.29	13.20	354.25	76.64	415.57	
	12	0.0	0.0	0.0	0.0	0.0	
	8	31.48	29.28	786.79	169.07	920.91	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.98	234.88	
	3	2.25	9.27	226.15	184.23	62.58	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	63.17	39.16	1051.12	227.41	1233.05	
		161.17	110.10	3781.43	1016.90	5563.01	10471.43
FOR ABOVE 3 CASES		717.50	505.45	17117.04	4555.51	26617.07	48795.07

TABLE 2.24

Emission Analysis for Case 23 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	3.30	2.18	63.76	13.99	65.08	
	12	0.0	0.0	0.0	0.0	0.0	
	8	107.10	106.03	3103.76	681.16	3168.02	
	6	93.60	61.78	1806.35	396.86	1845.79	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.29	
		292.00	195.54	7292.57	1688.05	11465.84	20642.00
EMISSION ANALYSIS FOR CASE 23							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.00	16.20	359.10	74.52	518.40	
	12	0.0	0.0	0.0	0.0	0.0	
	8	57.40	49.94	1145.13	239.36	1654.84	
	21	0.0	0.0	0.0	0.0	0.0	
	22	17.00	0.0	475.83	127.50	1564.17	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	87.60	52.56	1165.08	241.78	1661.92	
		256.33	185.77	5427.96	1708.53	9458.67	16780.93
EMISSION ANALYSIS FOR CASE 23							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	21.59	13.39	359.24	77.72	421.42	
	12	0.0	0.0	0.0	0.0	0.0	
	8	35.68	33.18	891.70	191.61	1043.70	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.96	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	65.67	40.71	1092.70	236.40	1281.82	
		167.17	115.12	3916.27	1045.92	5720.92	10798.23
FOR ABOVE 3 CASES		715.50	496.43	16636.79	4442.50	26645.43	48221.15

TABLE 2.25

Emission Analysis for Case 24 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	2.10	1.39	40.57	8.90	41.41	
	12	0.0	0.0	0.0	0.0	0.0	
	8	67.90	67.27	1967.74	431.84	2008.48	
	6	74.00	48.84	1429.68	313.76	1459.28	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	60.00	10.80	1764.00	468.00	5513.39	
		231.00	142.83	5725.30	1342.75	9804.24	17015.12
EMISSION ANALYSIS FOR CASE 24							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	17.09	10.25	227.30	47.17	326.13	
	20	27.30	16.36	363.09	75.35	524.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	111.30	96.83	2220.43	464.12	3208.78	
	21	0.0	0.0	0.0	0.0	0.0	
	22	25.00	0.0	699.75	187.50	2300.25	
	2	1.00	0.0	27.99	7.50	92.01	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	111.40	66.84	1481.62	307.46	2138.88	
		311.33	246.52	6194.71	1832.05	9431.90	17705.19
EMISSION ANALYSIS FOR CASE 24							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	13.99	8.68	232.84	50.37	273.14	
	20	19.79	12.27	329.31	71.24	386.30	
	12	0.0	0.0	0.0	0.0	0.0	
	8	36.38	33.84	909.18	195.37	1064.17	
	21	0.0	0.0	0.0	0.0	0.0	
	22	13.99	2.10	499.55	139.79	1291.27	
	1	2.00	6.00	185.91	45.98	239.89	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.60	1199.04	
	6	61.77	38.30	1027.64	222.37	1205.73	
		163.17	112.39	3874.64	1039.16	5722.41	10748.59
FOR ABOVE 3 CASES		705.50	501.74	15794.65	4213.95	24958.55	45468.89

TABLE 2.26

Emission Analysis for Case 25 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	3.90	2.57	75.35	16.54	76.91	
	12	0.0	0.0	0.0	0.0	0.0	
	8	114.10	112.96	3306.61	725.67	3375.07	
	6	96.00	64.66	1893.36	415.52	1932.56	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.08	1793.40	475.80	5605.28	
		304.00	205.77	7592.03	1753.77	11771.50	21323.06
EMISSION ANALYSIS FOR CASE 25							
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.30	16.38	363.09	75.35	524.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	50.40	43.85	1005.48	210.17	1455.03	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	836.79	662.00	794.79	
	11	3.59	2.15	47.75	9.91	64.93	
	6	85.30	51.18	1134.49	235.43	1637.76	
		245.33	178.48	5205.73	1658.82	9034.44	16077.47
EMISSION ANALYSIS FOR CASE 25							
BWI							
	18	13.99	6.68	232.84	50.37	273.14	
	20	21.89	13.57	364.23	78.80	427.27	
	12	0.0	0.0	0.0	0.0	0.0	
	8	34.28	31.86	856.73	184.10	1002.77	
	21	0.0	0.0	0.0	0.0	0.0	
	22	3.00	0.45	107.05	29.95	276.70	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	65.77	40.76	1094.36	236.76	1283.77	
		156.17	112.57	3531.13	940.00	4765.45	9349.15
FOR ABOVE 3 CASES		705.50	496.82	16328.89	4352.59	25571.39	46749.68

TABLE 2.27

Emission Analysis for Case 26 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	6.00	3.96	115.92	25.44	118.32	
	12	0.0	0.0	0.0	0.0	0.0	
	8	206.50	204.43	5984.27	1313.34	6108.27	
	6	142.50	94.05	2753.10	604.20	2810.10	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	7	0.0	0.0	0.0	0.0	0.0	
		376.00	316.30	9259.10	2032.02	9450.80	21058.21

EMISSION ANALYSIS FOR CASE 26

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	24.30	14.58	323.19	67.07	466.56	
	12	0.0	0.0	0.0	0.0	0.0	
	8	44.80	38.98	893.76	186.82	1291.58	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	33.00	0.0	923.67	247.50	3036.32	
	1	6.00	16.56	432.00	106.56	714.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	75.90	45.54	1009.47	209.48	1457.28	
		231.33	171.69	5129.07	1651.77	9056.93	16009.45

EMISSION ANALYSIS FOR CASE 26

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
	18	14.99	9.30	249.48	53.97	292.65	
	20	22.79	14.13	379.20	82.04	444.83	
	12	0.0	0.0	0.0	0.0	0.0	
	8	31.48	29.28	786.79	169.07	920.91	
	21	0.0	0.0	0.0	0.0	0.0	
	22	13.99	2.10	499.55	139.79	1291.27	
	1	2.00	6.00	165.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	13.99	2.10	499.55	139.79	1291.27	
	6	66.67	41.33	1109.33	240.00	1301.33	
		168.17	113.50	3935.95	1054.86	5845.03	10949.34
FOR ABOVE 3 CASES		775.49	601.49	18324.12	4738.65	24352.75	48017.00

TABLE 2.28

Emission Analysis for Case 27 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	11.40	7.52	220.25	48.34	224.81	
	12	0.0	0.0	0.0	0.0	0.0	
	8	140.70	139.29	4077.48	894.85	4161.90	
	6	126.90	83.75	2451.71	538.06	2502.47	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.29	
		367.00	256.13	9066.14	2077.28	13276.14	24675.69
		EMISSION ANALYSIS FOR CASE 27					

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	18.90	11.34	251.37	52.16	362.88	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.20	28.01	642.39	134.27	928.32	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	57.90	34.74	770.07	159.80	1111.68	
		191.33	141.17	4366.50	1484.12	7822.37	13814.15
		EMISSION ANALYSIS FOR CASE 27					

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	14.09	9.30	249.48	53.97	292.65	
	20	20.39	12.64	339.29	73.40	396.01	
	12	0.0	0.0	0.0	0.0	0.0	
	8	30.08	27.98	751.82	161.56	879.98	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1199.04	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	60.47	37.49	1006.22	217.69	1160.37	
		156.17	106.57	3686.58	996.44	5451.84	10241.43
FOR ABOVE 3 CASES		714.50	503.87	17119.23	4557.84	26550.35	48731.27

TABLE 2.29

Emission Analysis for Case 28 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	3.90	2.57	75.35	16.54	76.91	
	12	0.0	0.0	0.0	0.0	0.0	
	8	112.00	110.88	3245.76	712.32	3312.96	
	6	97.10	64.09	1875.97	411.70	1914.91	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.20	
		301.00	203.10	7513.79	1736.60	11691.64	21145.12
EMISSION ANALYSIS FOR CASE 28							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.60	16.56	367.08	76.18	529.92	
	12	0.0	0.0	0.0	0.0	0.0	
	8	53.20	46.28	1061.34	221.84	1533.76	
	21	0.0	0.0	0.0	0.0	0.0	
	22	15.00	0.0	419.85	112.50	1380.15	
	2	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	268.00	71.04	476.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	87.20	52.32	1159.76	240.67	1674.24	
		250.33	182.24	5290.85	1676.57	9157.41	16307.06
EMISSION ANALYSIS FOR CASE 28							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
[illegible]							
	18	13.99	8.68	232.84	50.37	273.14	
	20	22.19	13.76	369.22	79.88	433.13	
	12	0.0	0.0	0.0	0.0	0.0	
	8	32.18	29.93	804.27	172.83	941.38	
	21	0.0	0.0	0.0	0.0	0.0	
	22	13.99	2.10	499.55	139.79	1291.27	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	65.57	40.65	1091.04	236.04	1279.87	
		165.17	112.33	3872.85	1038.92	5720.58	10744.68
FOR ABOVE 3 CASES		716.50	497.66	16677.48	4452.09	26569.62	48196.86

TABLE 2.30

Emission Analysis for Case 29 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
DCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	6.00	3.96	115.92	25.44	118.32	
	12	0.0	0.0	0.0	0.0	0.0	
	8	213.50	211.36	6187.23	1357.86	6315.32	
	6	145.50	96.03	2811.06	616.92	2869.26	
	21	0.0	0.0	0.0	0.0	0.0	
	22	0.0	0.0	0.0	0.0	0.0	
	2	0.0	0.0	0.0	0.0	0.0	
		396.00	325.21	9519.92	2089.26	9717.02	21651.40
EMISSION ANALYSIS FOR CASE 29							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	24.00	14.40	319.20	66.24	460.80	
	12	0.0	0.0	0.0	0.0	0.0	
	8	42.00	36.54	837.90	175.14	1210.86	
	21	0.0	0.0	0.0	0.0	0.0	
	22	16.00	0.0	447.84	120.00	1472.16	
	2	32.00	0.0	895.68	240.00	2944.32	
	1	5.00	13.80	360.00	88.80	595.00	
	3	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	68.93	
	6	74.00	44.40	984.20	204.24	1420.80	
		225.33	165.17	4971.95	1616.26	8814.96	15568.34
EMISSION ANALYSIS FOR CASE 29							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
BWI							
	18	14.99	9.30	249.48	53.97	292.65	
	20	21.89	13.57	364.23	78.80	427.27	
	12	0.0	0.0	0.0	0.0	0.0	
	8	34.28	31.88	856.73	184.10	1002.77	
	21	0.0	0.0	0.0	0.0	0.0	
	22	12.99	1.95	463.87	129.80	1149.04	
	1	2.00	6.00	185.91	45.98	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	65.77	40.78	1094.36	236.76	1283.77	
		167.17	114.69	3904.58	1043.45	5707.30	10770.02
FOR ABOVE 3 CASES		778.50	605.07	18396.45	4748.96	24239.28	47989.76

TABLE 2.31

Emission Analysis for Case 30 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
DCA						
	18	21.00	13.86	405.72	89.04	414.12
	20	11.40	7.52	220.25	48.34	224.81
	12	0.0	0.0	0.0	0.0	0.0
	8	140.70	139.29	4077.48	894.65	4161.40
	6	126.90	83.75	2451.71	538.05	2502.47
	21	0.0	0.0	0.0	0.0	0.0
	22	6.00	0.72	117.60	31.20	367.56
	2	61.00	10.96	1793.40	475.20	5605.20
		367.00	256.13	9066.14	2077.28	13276.14	24675.69
EMISSION ANALYSIS FOR CASE 30						
IAD						
	18	18.09	10.85	240.60	49.93	347.33
	20	18.90	11.34	251.37	52.16	362.88
	12	0.0	0.0	0.0	0.0	0.0
	8	32.20	28.01	642.39	134.27	928.32
	21	0.0	0.0	0.0	0.0	0.0
	22	15.00	0.0	419.55	112.50	1380.15
	2	31.00	0.0	867.69	232.50	2852.31
	1	4.00	11.04	288.00	71.04	476.00
	3	10.65	43.03	838.79	662.00	294.79
	11	3.59	2.15	47.75	9.91	68.93
	6	57.90	34.74	770.07	159.80	1111.68
		191.33	141.17	4366.50	1484.12	7822.37	13814.15
EMISSION ANALYSIS FOR CASE 30						
BWI						
	18	14.99	9.30	249.48	53.97	292.65
	20	20.39	12.64	339.29	73.40	396.01
	12	0.0	0.0	0.0	0.0	0.0
	8	30.08	27.98	751.82	161.56	879.98
	21	0.0	0.0	0.0	0.0	0.0
	22	12.99	1.95	463.87	129.80	1199.04
	1	2.00	6.00	185.91	45.96	239.88
	3	2.25	9.27	226.15	184.23	62.88
	2	12.99	1.95	463.87	129.80	1199.04
	6	60.47	37.49	1006.22	217.69	1150.37
		156.17	106.57	3686.58	996.44	5451.84	10241.43
FOR ABOVE 3 CASES		714.50	503.87	17119.23	4557.84	26550.35	48731.27

TABLE 2.32

Emission Analysis for Case 31 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
OCA						
	1	22.00	14.52	425.04	93.28	433.84
	20	3.90	2.57	75.35	16.54	76.91
	12	0.0	0.0	0.0	0.0	0.0
	8	114.10	112.96	3306.62	725.68	3375.08
	6	98.00	64.68	1893.36	415.52	1932.56
	21	0.0	0.0	0.0	0.0	0.0
	22	6.00	0.72	117.60	31.20	367.56
	2	61.00	10.98	1793.40	475.60	5605.29
		305.00	206.43	7611.35	1758.01	11791.22 21367.01
EMISSION ANALYSIS FOR CASE 31						
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
LAX						
	18	18.09	10.85	240.60	49.93	347.33
	20	27.30	14.38	363.09	75.35	524.16
	12	0.0	0.0	0.0	0.0	0.0
	8	50.40	43.85	1105.48	210.17	1493.03
	21	0.0	0.0	0.0	0.0	0.0
	22	15.00	0.0	419.85	112.50	1380.15
	2	31.00	0.0	867.69	232.50	2852.31
	1	4.00	11.04	288.00	71.04	476.00
	4	10.65	43.04	638.79	662.00	234.79
	11	3.59	2.15	47.75	9.91	58.93
	6	85.35	51.18	1134.49	235.43	1637.76
		245.33	178.48	5705.73	1658.82	9434.44 16077.47
EMISSION ANALYSIS FOR CASE 31						
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTIC-ULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN
SFO						
	18	13.99	8.68	232.84	50.37	273.14
	20	21.89	13.57	364.23	78.80	427.27
	12	0.0	0.0	0.0	0.0	0.0
	8	34.28	31.88	856.73	184.10	1002.77
	21	0.0	0.0	0.0	0.0	0.0
	22	12.99	1.95	463.47	129.80	1199.04
	1	2.00	4.00	185.41	45.98	234.86
	3	2.25	9.27	226.15	184.23	92.88
	2	12.99	1.95	463.47	129.80	1199.04
	6	65.77	40.78	1 94.36	236.76	1203.77
		166.17	114.07	3487.95	1039.85	5687.79 10729.45
FOR ABOVE 3 CASES		716.50	498.98	16705.03	4456.68	26513.45 48174.13

TABLE 2.33

Emission Analysis for Case 32 (Pounds/Day)

AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTICULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
OCA							
	18	21.00	13.86	405.72	89.04	414.12	
	20	2.10	1.39	40.57	8.90	41.41	
	12	0.0	0.0	0.0	0.0	0.0	
	8	71.40	70.69	2069.17	454.10	2112.01	
	6	75.50	49.83	1458.66	320.12	1488.86	
	21	0.0	0.0	0.0	0.0	0.0	
	22	6.00	0.72	117.60	31.20	367.56	
	2	61.00	10.98	1793.40	475.80	5605.29	
		237.00	147.46	5885.12	1379.17	10029.24	17440.98
EMISSION ANALYSIS FOR CASE 32							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTICULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
IAD							
	18	18.09	10.85	240.60	49.93	347.33	
	20	27.30	16.38	363.09	75.35	524.16	
	12	0.0	0.0	0.0	0.0	0.0	
	8	91.00	79.17	1815.45	379.47	2623.53	
	21	0.0	0.0	0.0	0.0	0.0	
	22	22.00	0.0	615.78	165.00	2024.22	
	3	31.00	0.0	867.69	232.50	2852.31	
	1	4.00	11.04	288.00	71.04	476.00	
	2	10.65	43.03	838.79	662.00	294.79	
	11	3.59	2.15	47.75	9.91	66.93	
	6	102.70	61.62	1365.91	283.45	1971.84	
		310.33	224.24	6443.05	1928.65	11183.08	19779.02
EMISSION ANALYSIS FOR CASE 32							
AIRPORT	AMES A/C TYPE	ARR/DEP CYCLES	PARTICULATES	CARBON MONOX.	HYDRO-CARBONS	OXIDES OF NITROGEN	
	18	13.99	8.68	232.84	50.37	273.14	
	20	19.79	12.27	329.31	71.24	386.30	
	12	0.0	0.0	0.0	0.0	0.0	
	8	36.38	33.64	909.18	195.37	1064.17	
	21	0.0	0.0	0.0	0.0	0.0	
	22	13.99	2.10	499.55	139.79	1291.27	
	1	2.00	6.00	185.91	45.48	239.88	
	3	2.25	9.27	226.15	184.23	62.88	
	2	12.99	1.95	463.87	129.80	1199.04	
	6	61.77	38.30	1027.84	222.37	1205.73	
		163.17	112.39	3874.64	1039.16	5722.41	10748.59
FOR ABOVE 3 CASES		710.50	484.09	16202.80	4346.97	26934.73	47968.59

Aircraft Emissions Summary Data

Table 2.34 presents the total aircraft emission levels for each airport and for each case, in pounds per day.

2.2 Automobile Emissions

Because of the nature of the method used to estimate automobile emissions related to aircraft operating levels and passenger load levels, the percentage of the total emissions represented by a given type of pollutant is the same at all airports and for all cases. These percentages are as follows:

Carbon Monoxide	79,143 percent
Nitrogen Oxide	9.336 percent
Sulfur Dioxide	0.726 percent
Aldepydes	1.452 percent
Total Hydrocarbons	9.236 percent
Lead	0.066 percent
Particulates	0.132 percent

TABLE 2.34

Total Aircraft Emissions by Airport and Case

CASE	NATIONAL	DULLES	BALTIMORE	TOTAL
1	16,580	11,699	8,780	37,059
2	21,651	15,568	10,770	47,989
3	19,490	16,975	10,831	47,296
4	17,222	19,291	11,105	47,618
5	14,999	20,266	11,068	46,333
6	12,806	24,052	11,355	48,213
7	20,792	16,130	10,906	47,828
8	17,178	19,291	11,105	47,574
9	12,718	24,052	11,355	48,125
10	22,556	15,091	10,554	48,201
11	23,439	14,449	10,347	48,235
12	24,192	14,078	10,293	48,563
13	24,676	13,814	10,241	48,731
14	18,573	18,200	11,000	47,773
15	19,753	17,510	10,636	47,899
16	14,398	16,623	10,660	41,681
17	21,367	16,077	10,730	48,174
18	14,320	22,307	11,060	47,687
19	15,300	21,476	10,994	47,770
20	16,424	20,684	10,582	47,690
21	17,441	19,779	10,749	47,969
22	24,162	14,162	10,471	48,795
23	20,642	16,781	10,798	48,221
24	17,015	17,705	10,749	45,469
25	21,323	16,077	9,349	46,749
26	21,058	16,010	10,949	48,017
27	24,676	13,814	10,241	48,731
28	21,145	16,307	10,745	48,197
29	21,651	15,568	10,770	47,989
30	24,676	13,814	10,241	48,731
31	21,367	16,077	10,730	48,174
32	17,441	19,779	10,749	47,969

Table 2.35 presents the complete data from the automobile emission analysis in pounds of pollutant per day. Four sets of data are presented. Three of these are the pollution levels on each of the three airports. The fourth is the additional pollution given off by automobiles used to carry passengers who, because of the policy option enforced at National, use Dulles and/or Baltimore instead of National. The emissions from these passengers who switch airports are emissions from the extra driving these passengers must perform beyond the driving they would have performed if they had not switched airports. The number of such switching passengers is defined with respect to the number of passengers using National under the 1990 base case, Case 2. For those Cases (10, 11, 12, 13, 22, and 27), for which the number of passengers using National is greater than under Case 2, no additional air pollution is assigned.

TABLE 2.35

Automobile Emission Levels (pounds per day)

Case	Airport Type	CO	NOX	SO_2	Alderhydes	Total Hydrocarbons	Lead	Particulates	TOTAL
1	National	352.35	41.11	3.23	6.46	41.11	0.29	0.58	444.84
	Dulles	341.13	39.80	3.13	6.25	39.80	0.28	0.57	430.96
	Baltimore	372.35	43.44	3.41	6.82	43.44	0.31	0.62	470.39
2	National	559.29	65.25	5.13	10.25	65.25	0.47	0.93	706.58
	Dulles	1,483.16	173.04	13.60	27.19	173.04	1.24	2.47	1,873.73
	Baltimore	792.24	92.43	7.26	14.52	92.43	0.66	1.32	1,000.86
3	National	487.29	56.85	4.47	8.93	56.85	0.41	0.81	615.62
	Dulles	1,692.74	197.49	15.52	31.03	197.49	1.41	2.28	2,138.49
	Baltimore	835.48	97.47	7.66	15.32	97.47	0.70	1.39	1,055.49
4	National	417.94	48.76	3.83	7.66	48.76	0.35	0.70	528.00
	Dulles	1,946.43	227.08	17.84	35.68	227.08	1.62	3.24	2,458.99
	Baltimore	832.57	97.13	7.63	15.26	97.13	0.69	1.39	1,051.82
	Switch	2,735.23	319.11	25.07	50.15	319.11	2.28	4.56	3,455.51
5	National	357.62	41.72	3.28	6.56	41.72	0.30	0.60	451.79
	Dulles	2,177.42	254.03	19.96	39.92	254.03	1.81	3.63	2,750.80
	Baltimore	820.94	95.78	7.53	15.05	95.78	0.68	1.37	1,037.12
	Switch	3,902.56	455.30	35.77	71.55	455.30	3.25	6.50	4,930.23
6	National	303.30	35.39	2.78	5.56	35.39	0.25	0.51	383.17
	Dulles	2,334.74	272.39	21.40	42.80	272.39	1.95	3.89	2,949.55
	Baltimore	854.19	99.66	7.83	15.66	99.66	0.71	1.42	1,079.13
	Switch	4,953.28	577.88	45.41	90.81	577.88	4.13	8.25	6,257.64
7	National	531.28	61.98	4.87	9.74	61.98	0.44	0.89	671.18
	Dulles	1,554.00	181.30	14.25	28.49	181.30	1.29	2.59	1,963.22
	Baltimore	818.43	95.48	7.50	15.00	95.48	0.68	1.39	1,033.95
	Switch	542.06	63.24	4.97	9.94	63.24	0.45	0.90	684.80

TABLE 2.35

Automobile Emission Levels (pounds per day)

Case	Airport Type	CO	NOX	SO_2	Alderhydes	Total Hydrocarbons	Lead	Particulates	TOTAL
8	National	417.94	48.76	3.83	7.66	48.76	0.35	0.70	528.00
	Dulles	1,946.43	227.08	17.84	35.68	227.08	1.62	3.24	2,458.99
	Baltimore	832.60	94.14	7.63	15.26	97.14	0.69	1.39	1,051.85
	Switch	2,735.23	319.11	25.07	50.15	319.11	2.28	4.56	3,455.51
9	National	303.30	35.39	2.78	5.56	35.39	0.25	0.51	383.17
	Dulles	2,334.74	272.39	21.40	42.80	272.39	1.95	3.89	2,949.50
	Baltimore	854.19	99.66	7.83	15.66	99.66	0.71	1.42	1,079.13
	Switch	4,953.28	577.88	45.41	90.81	577.88	4.13	8.26	6,257.64
10	National	583.19	68.04	5.35	10.69	68.04	0.49	0.97	736.76
	Dulles	1,424.99	166.25	13.06	26.12	166.25	1.19	2.37	1,800.23
	Baltimore	768.00	89.60	7.04	14.08	89.60	0.64	1.28	970.24
11	National	610.02	71.17	5.59	11.18	71.17	0.51	1.02	770.63
	Dulles	1,340.09	156.34	12.28	24.57	156.34	1.12	2.23	1,692.93
	Baltimore	758.04	88.44	6.95	13.90	88.44	0.63	1.26	957.63
12	National	628.31	73.30	5.76	11.52	7.330	0.52	1.05	793.76
	Dulles	1,278.55	149.16	11.72	23.44	149.16	1.07	2.13	1,615.24
	Baltimore	754.15	87.98	6.91	13.83	87.98	0.63	1.26	952.74
13	National	642.74	74.99	5.89	11.78	74.99	0.54	1.07	811.99
	Dulles	1,235.55	144.15	11.33	22.65	144.15	1.03	2.06	1,560.91
	Baltimore	746.41	87.08	6.84	13.68	87.08	0.62	1.24	942.96
14	National	456.11	53.21	4.18	8.36	53.21	0.38	0.76	576.21
	Dulles	1,811.02	211.29	16.60	33.20	211.29	1.51	3.02	2,287.92
	Baltimore	830.51	96.89	7.61	15.23	96.89	0.69	1.38	1,049.21
	Switch	1,996.76	232.95	18.30	36.61	232.95	1.66	3.33	2,522.57

TABLE 2.35

Automobile Emission Levels (pounds per day)

Case	Airport Type	CO	NOX	SO_2	Alderhydes	Total Hydrocarbons	Lead	Particulates	TOTAL
15	National	486.13	56.72	4.46	8.91	56.72	0.41	0.81	614.15
	Dulles	1,742.30	203.27	15.97	31.94	203.27	1.45	2.90	2,201.10
	Baltimore	796.41	92.91	7.30	14.60	92.91	0.66	1.33	1,006.14
	Switch	1,416.08	165.21	12.98	25.96	165.21	1.18	2.36	1,788.98
16	National	512.67	59.81	4.70	9.40	59.81	0.43	0.84	647.67
	Dulles	1,627.19	189.84	14.92	29.83	189.84	1.36	2.73	2,055.68
	Baltimore	813.04	94.85	7.45	14.91	94.85	0.68	1.36	1,027.14
	Switch	902.30	105.27	8.27	16.54	105.27	0.75	1.50	1,139.90
17	National	525.81	61.34	4.82	9.64	61.34	0.44	0.88	664.27
	Dulles	1,582.12	184.58	14.50	29.01	184.58	1.32	2.64	1,998.75
	Baltimore	811.24	94.64	7.44	14.87	9.464	0.68	1.36	1,024.87
	Switch	648.42	75.65	5.94	11.89	75.65	0.54	1.08	819.17
18	National	337.32	39.35	3.09	6.18	39.35	0.28	0.56	426.15
	Dulles	2,235.62	260.82	20.49	40.99	260.82	1.86	3.72	2,824.33
	Baltimore	833.97	97.30	7.64	15.29	97.30	0.69	1.39	1,053.59
	Switch	4,295.39	501.13	39.37	78.75	501.13	3.58	7.16	5,426.51
19	National	368.56	43.00	3.38	6.76	43.00	0.31	0.61	465.62
	Dulles	2,136.66	249.28	19.59	39.17	249.28	1.78	3.56	2,699.31
	Baltimore	822.05	95.91	7.54	15.07	95.91	0.69	1.37	1,038.53
	Switch	3,690.71	430.58	33.83	67.66	430.58	3.08	6.15	4,662.60
20	National	394.15	45.98	3.61	7.23	45.98	0.33	0.66	497.94
	Dulles	2,070.16	241.52	18.98	37.95	241.52	1.73	3.46	2,615.30
	Baltimore	799.61	93.29	7.33	14.66	93.29	0.67	1.34	1,010.28
21	National	413.02	48.19	3.79	7.57	48.19	0.34	0.68	521.78
	Dulles	2,002.55	233.63	18.36	36.71	233.63	1.67	3.34	2,529.88
	Baltimore	799.19	93.24	7.33	14.65	93.24	0.67	1.33	1,009.64
	Switch	2,830.44	330.22	25.95	51.89	330.22	2.36	4.72	3,575.79

TABLE 2.35

Automobile Emission Levels (pounds per day)

Case	Airport Type	CO	NOX	SO_2	Alderhydes	Total Hydrocarbons	Lead	Particulates	TOTAL
22	National	621.91	72.56	5.70	11.40	72.56	0.52	1.04	785.68
	Dulles	1,291.98	150.73	11.84	23.69	150.73	1.08	2.15	1,632.20
	Baltimore	762.48	88.96	6.99	13.98	88.96	0.64	1.27	963.26
23	National	506.85	59.13	4.65	9.29	59.13	0.42	0.84	640.33
	Dulles	1,643.84	191.78	15.07	30.14	191.78	1.37	2.74	2,076.72
	Baltimore	817.06	95.32	7.49	14.98	95.32	0.68	1.36	1,032.22
	Switch	1,014.66	118.38	9.30	18.60	118.38	0.85	1.69	1,281.85
24	National	401.60	46.85	3.68	7.36	46.85	0.33	0.67	507.36
	Dulles	2,037.07	237.66	18.67	37.35	237.66	1.70	3.40	2,573.49
	Baltimore	805.14	93.93	7.38	14.76	93.93	0.67	1.34	1,017.16
	Switch	3,051.73	356.03	27.97	55.95	356.03	2.54	5.09	3,855.35
25	National	525.81	61.34	4.82	9.64	61.34	0.44	0.88	664.27
	Dulles	1,578.92	184.21	14.47	28.95	184.21	1.32	2.63	1,994.71
	Baltimore	811.24	94.64	7.44	1.487	9.464	0.68	1.35	1,024.87
	Switch	648.42	75.65	5.94	11.89	75.65	0.54	1.08	819.17
26	National	542.59	63.30	4.97	9.95	63.30	0.45	0.90	685.47
	Dulles	1,532.88	178.84	14.05	28.10	178.84	1.28	2.55	1,936.54
	Baltimore	801.41	93.50	7.35	14.69	93.50	0.67	1.34	1,012.45
	Switch	323.34	37.72	2.96	5.93	37.72	0.27	0.54	408.49
27	National	642.74	74.99	5.89	11.78	74.99	0.54	1.07	811.99
	Dulles	1,235.55	144.15	11.33	22.65	144.15	1.03	2.06	1,560.91
	Baltimore	746.41	87.08	6.84	13.68	87.08	0.62	1.24	942.96
28	National	520.84	60.76	4.77	9.55	60.76	0.43	0.87	657.99
	Dulles	1,604.83	187.23	14.71	29.42	187.23	1.34	2.67	2,027.43
	Baltimore	807.09	94.16	7.40	14.80	94.16	0.67	1.35	1,019.63
	Switch	744.50	8.686	6.82	13.65	86.86	0.62	1.24	940.55

TABLE 2.35

Automobile Emission Levels (pounds per day)

Case	Airport Type	CO	NOX	SO_2	Alderhydes	Total Hydrocarbons	Lead	Particulates	TOTAL
29	National	559.29	65.25	5.13	10.25	65.25	0.47	0.93	706.58
	Dulles	1,483.16	173.04	13.60	27.19	173.04	1.24	2.47	1,873.73
	Baltimore	792.24	92.43	7.26	14.52	9.243	0.66	1.22	1,000.26
30	National	642.74	74.99	5.89	11.78	74.99	0.54	1.07	811.99
	Dulles	1,235.55	144.15	11.33	22.65	144.15	1.03	2.06	1,560.91
	Baltimore	746.41	87.08	6.84	13.68	87.08	0.62	1.24	942.36
31	National	525.81	61.34	4.82	9.64	61.34	0.44	0.88	664.27
	Dulles	1,582.12	184.58	14.50	29.01	184.58	1.32	2.64	1,998.75
	Baltimore	811.24	94.64	7.44	14.87	94.64	0.68	1.34	1,024.87
	Switch	648.42	75.65	5.94	11.89	75.65	0.54	1.08	819.17
32	National	413.02	48.19	3.79	7.57	48.19	0.34	0.64	521.78
	Dulles	2,002.55	233.63	18.36	36.71	233.63	1.67	3.34	2,529.88
	Baltimore	799.19	93.24	7.33	14.65	93.24	0.67	1.33	1,009.64
	Switch	2,830.44	330.22	25.95	51.89	330.22	2.36	4.72	3,575.79